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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,924	07/28/2003	Heng-Liang Lin	025697-00023	3738

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EXAMINER	
GOKHALE, SAMEER K	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/627,924	LIN, HENG-LIANG	
	Examiner	Art Unit	
	Sameer K. Gokhale	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-7, claim 1 recites "...said scroll wheel shaft and said elastic arm of said supporting base being integrally formed and being jointed with said scroll wheel by said scroll wheel interposing through said wheel shaft of the scroll wheel..." on lines 10-13. This is indefinite because it is not clear how the scroll wheel can interpose through its own wheel shaft.

Regarding claims 2-4, claims 2 and 3 make use of the term " ...'Π' – shaped channeling grooves..." on line 2 of claim 2 and line 2 of claim 3, except a similar symbol was used instead of the greek letter "Π". This renders the claim indefinite because it is not clear that the Applicant intended the shape to be described in the claim to look exactly like the symbol they have inserted in the copy of the claims submitted, which it should be noted does not have all right angles connecting its segments and almost appears to be a skewed version of the letter "n".

Due to the above rejections under 35 U.S.C. 112, the following rejections are based on the claims as best understood by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,012,594) in view of Applicant's Disclosed Prior Art (hereafter, "ADPA").

Regarding claim 1, Wang teaches a third shaft structure of a cursor input device comprising: a base (Fig. 1, base 10), a circuit board (Fig. 1, circuit board 15); and a third shaft structure (Fig. 1 shows the third shaft structure mounted on the circuit board), comprising: a support base having a coupling portion (Fig. 1, where the circuit board acts as the support base and item 14 acts as coupling portion), a round-shaped groove (Fig. 2, groove 30), a scroll wheel shaft (Fig. 2, item 30 acts as the scroll wheel shaft) and an elastic arm (Fig. 2, arm 34); and a scroll wheel (Fig. 2, wheel 20) having the center thereof being disposed with a wheel shaft (Fig. 2, shaft 26), an indented surface being disposed inside said scroll wheel (Fig. 2, grooves 28); wherein said coupling portion, said round-shaped groove, said scroll wheel shaft and said elastic arm of said supporting base being integrally formed and being jointed with said scroll wheel by said scroll wheel interposing through said wheel shaft of the scroll wheel (Fig. 1, where the scroll wheel is connected to the rest of the apparatus through the wheel shaft), said

indented surface of said scroll wheel being for said elastic arm to prop against, so as to cause a segmented sensation as said scroll wheel being rotated upwards and downwards (see col. 2, line 61 – col. 3, line 1).

However, Wang does not explicitly teach a device with a track ball mechanism.

However, the APDA does teach a device with a track ball mechanism (see Applicant's specification, para. 1, lines 2-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the trackball mechanism of the APDA in the device of Wang in order to have a trackball underneath the mouse to perform the actual cursor movement commonly performed by a mouse device.

Regarding claim 5, Wang further teaches a third shaft structure wherein said elastic arm has a fixed end and a free end (Fig. 2, 35 is fixed, 39 is free), with said fixed end being connected to the top end of said round-shaped groove (Fig. 2, where the end 35 is connected to the top of the front end on the groove 30).

Regarding claim 6, Wang further teaches a third shaft structure wherein a protruding block is mounted at the front end of said free end (Fig. 2, see the end of 39), with both sides of said protruding block being formed as biased surfaces (It is clear that the top side of the tip of 39 is not flat and is biased due to the curved nature of the block, and it is evident that the bottom side is also biased in such a way).

Regarding claim 7, Wang further teaches a third shaft structure of the cursor input wherein said indented surface has flanges and concave surfaces (Fig. 2 shows that the inner surface of wheel 20 has flanges and concave surfaces).

5. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,012,594) in view of the APDA.

Regarding claim 2, Wang in view of the APDA teaches the limitations of claim 1 as discussed above, and Wang further teaches channeling grooves mounted on both sides of the coupling portion (Fig. 1 where 12a and 12b are the channeling grooves). However Wang does not teach 'Π' – shaped channeling grooves. However it would have been an obvious design choice for Wang to use 'Π' – shaped channeling grooves because Wang's grooves achieve the same claimed function of mounting both sides of the coupling portion and the criticality of using the 'Π' – shape has not been disclosed.

Regarding claim 3, Wang in view of the APDA teaches the limitations of claim 1 as discussed above, and Wang further teaches a device wherein the round-shaped groove is horizontally placed in-between channeling grooves on the coupling portion (Fig. 1, where the groove 30 is between the channeling grooves 12a and is also bracketing the coupling portion 14). However Wang does not teach 'Π' – shaped

channeling grooves. However it would have been an obvious design choice for Wang to use 'Π' – shaped channeling grooves because Wang's grooves achieve the same claimed function of having the round-shaped groove placed in-between the channeling grooves on the the criticality of using the 'Π' – shape has not been disclosed.

Regarding claim 4, Wang further teaches a third shaft structure, wherein said round-shaped groove is extended forward to form a scroll wheel shaft with two sides of the front end thereof being flattened respectively to form two flat surfaces (Fig. 2, where item 30 can be considered extended forward and it has two flat sides on an end that can be considered a front end).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Koo (US 6,987,505) teaches a mouse scroll wheel with an elastic arm for causing a segmenting sensation. Chang (US 6,285,355) teaches a scroll wheel for a mouse where there is a shaft that goes through the scrool wheel axial shaft. Lindhout et al. (US 20040001042) teaches a scroll wheel for a mouse with an elastic arm for causing a segmented sensation. Bohn (US 7,061,471) teaches a scroll wheel with notches that have biased edges that create a segmented feeling. Long (US 6,353,429) teaches a detented optical encoder for a scroll wheel.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sameer K. Gokhale whose telephone number is (571) 272-5553. The examiner can normally be reached on M-F 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SKG
September 13, 2006

Sameer Gokhale
Examiner
Art Unit 2629

AMR A. AWAD
SUPERVISORY PATENT EXAMINER